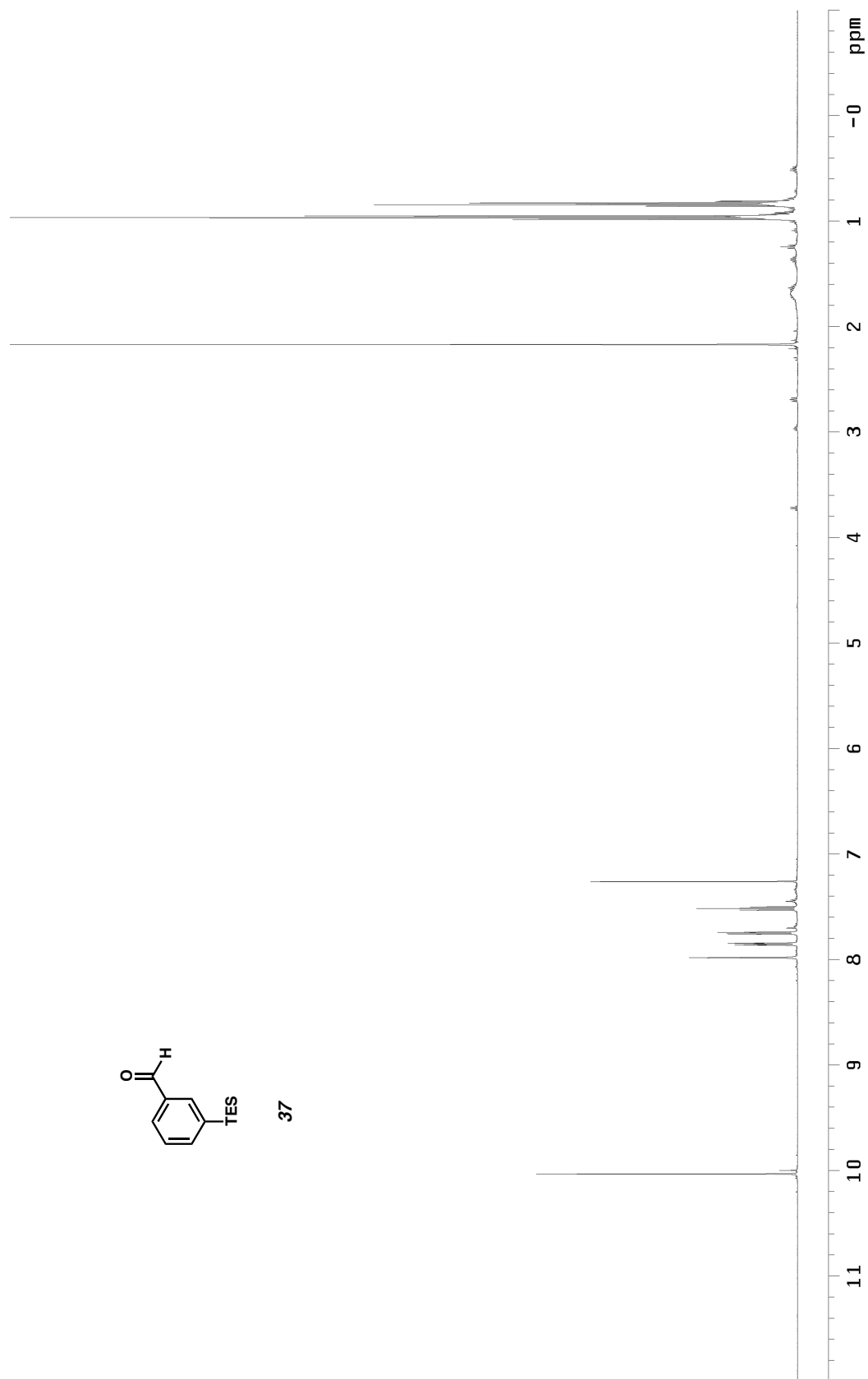


Appendix 1

Spectra of Compounds Relevant to Chapter 2

Figure A1.1. ^1H NMR spectrum of 3-(triethylsilyl)benzaldehyde (37) in CDCl_3

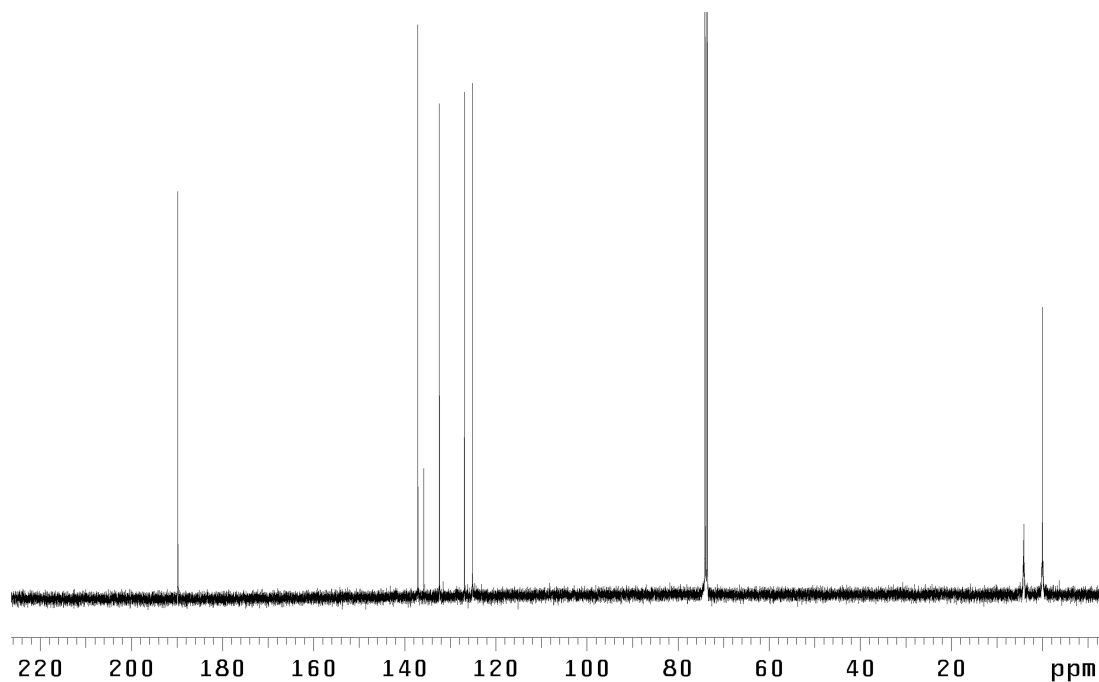


Figure A1.2. ^{13}C NMR spectrum of 3-(triethylsilyl)benzaldehyde (**37**) in CDCl_3

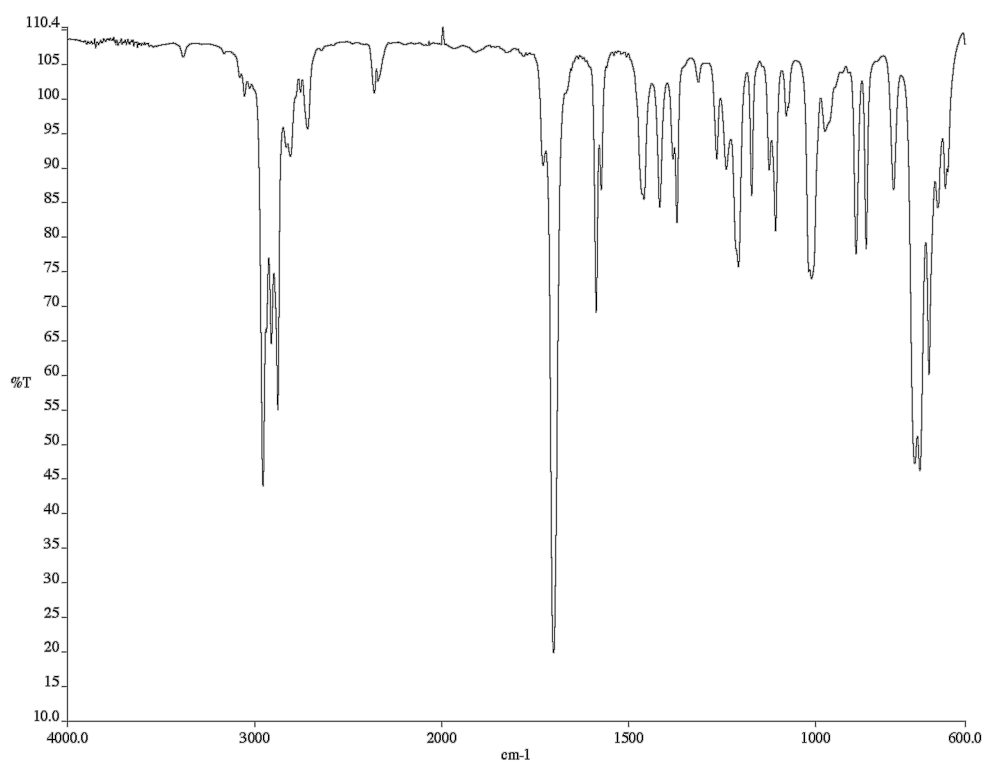
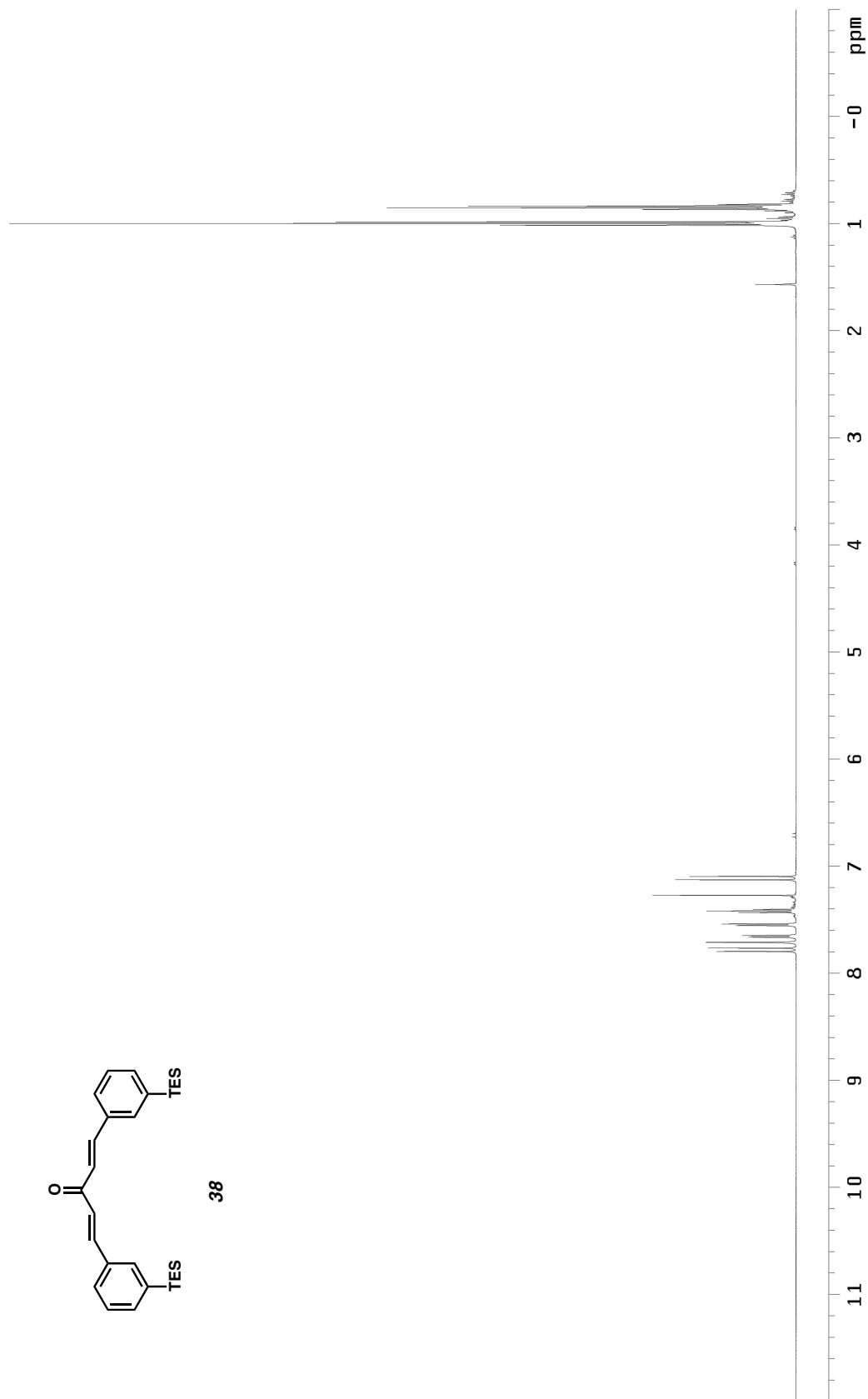


Figure A1.3. IR spectrum of 3-(triethylsilyl)benzaldehyde

Figure A1.4. ¹H NMR spectrum of 1,5-bis-[3-(triethylsilyl)phenyl]penta-1,4-dien-3-one, **38** in CDCl₃

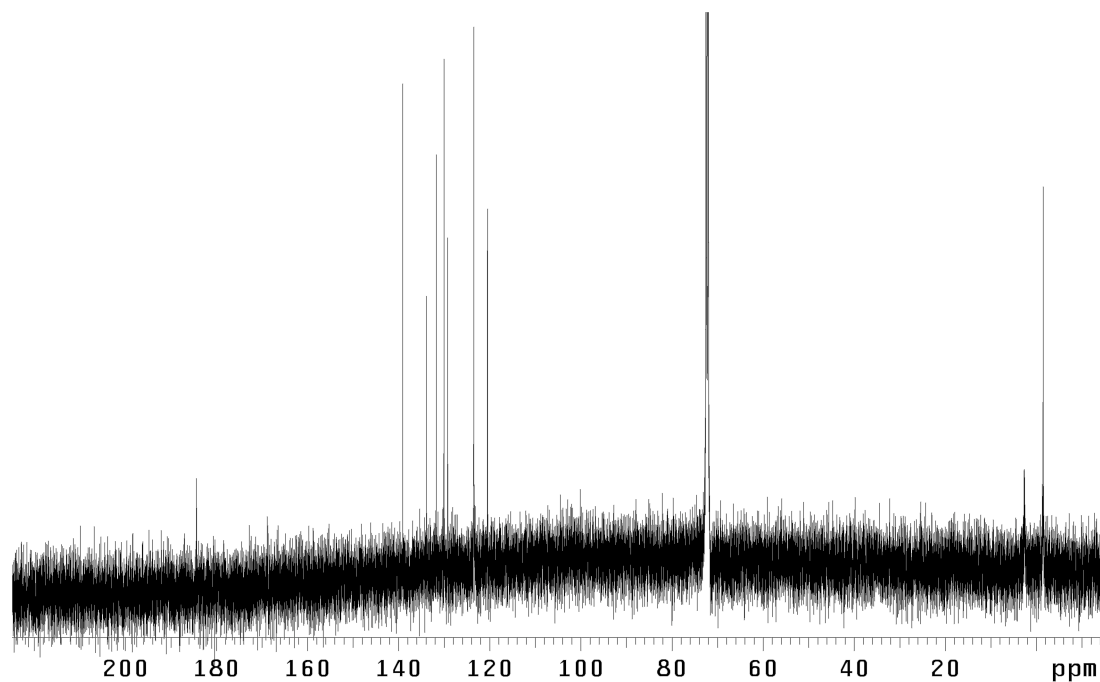


Figure A1.5. ^{13}C NMR spectrum of 1,5-bis-[3-(triethylsilyl)phenyl]penta-1,4-dien-3-one, mtdba (**38**) in CDCl_3

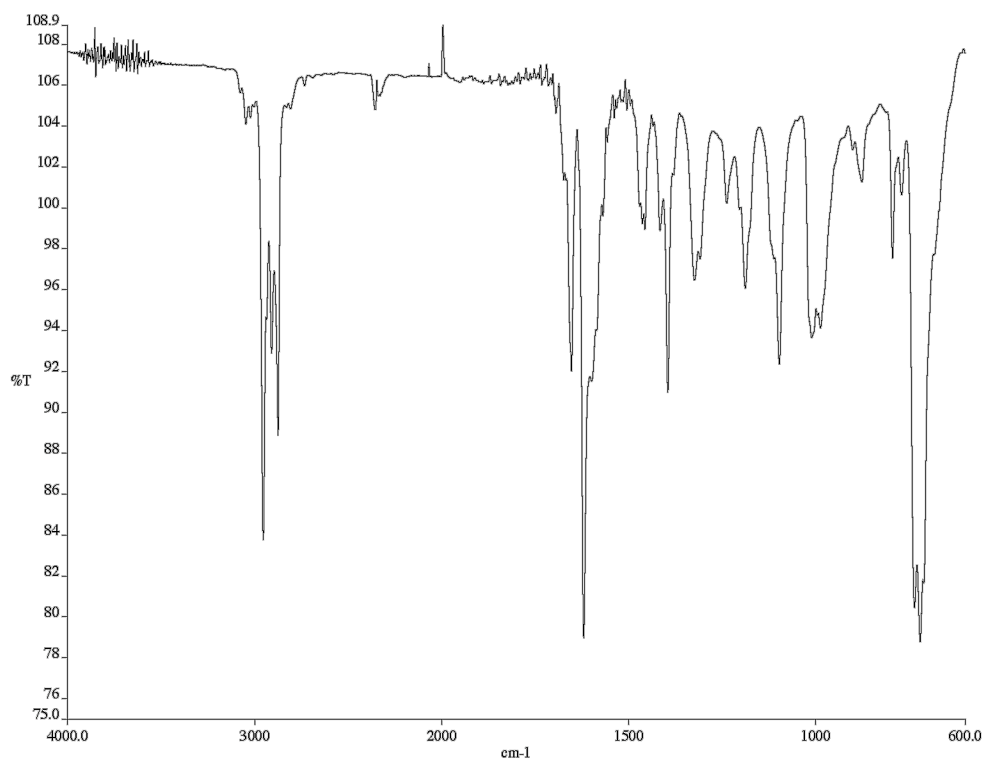
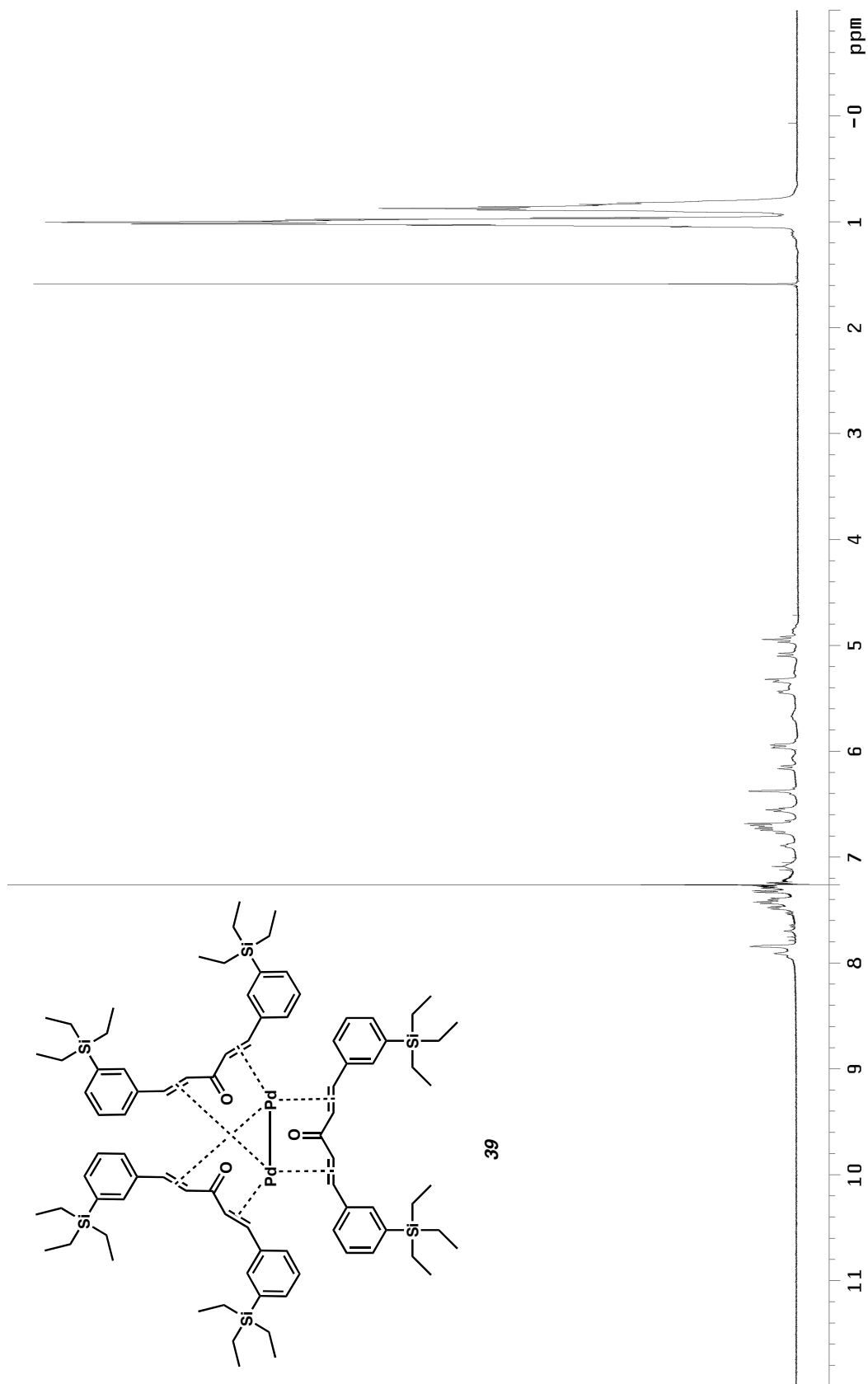


Figure A1.6. IR spectrum of 1,5-bis-[3-(triethylsilyl)phenyl]penta-1,4-dien-3-one, mtdba (**38**) in CDCl_3

Figure A1.7. 1H NMR spectrum of $[Pd_2(mtdba)_3]$ (**39**) in $CDCl_3$

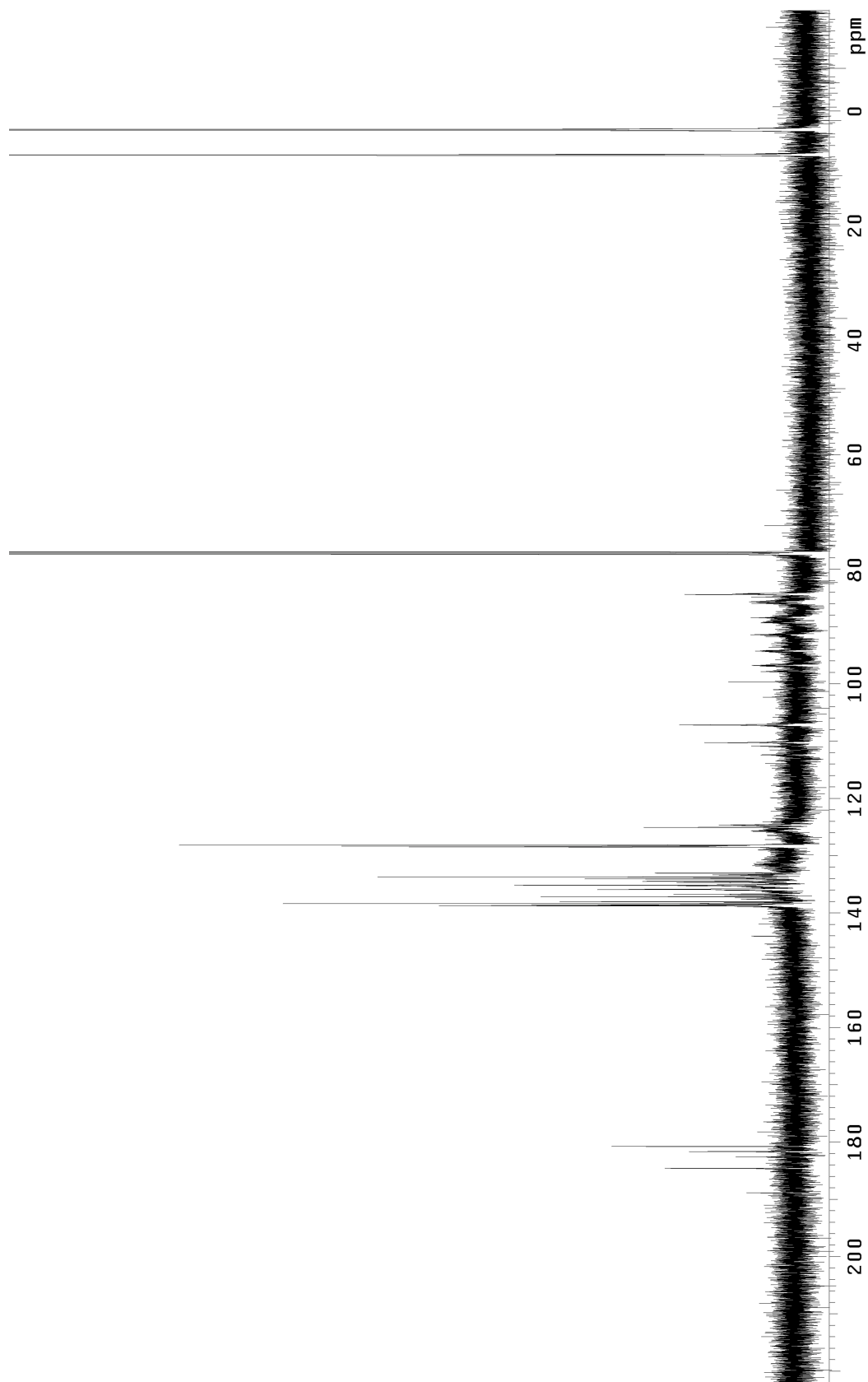
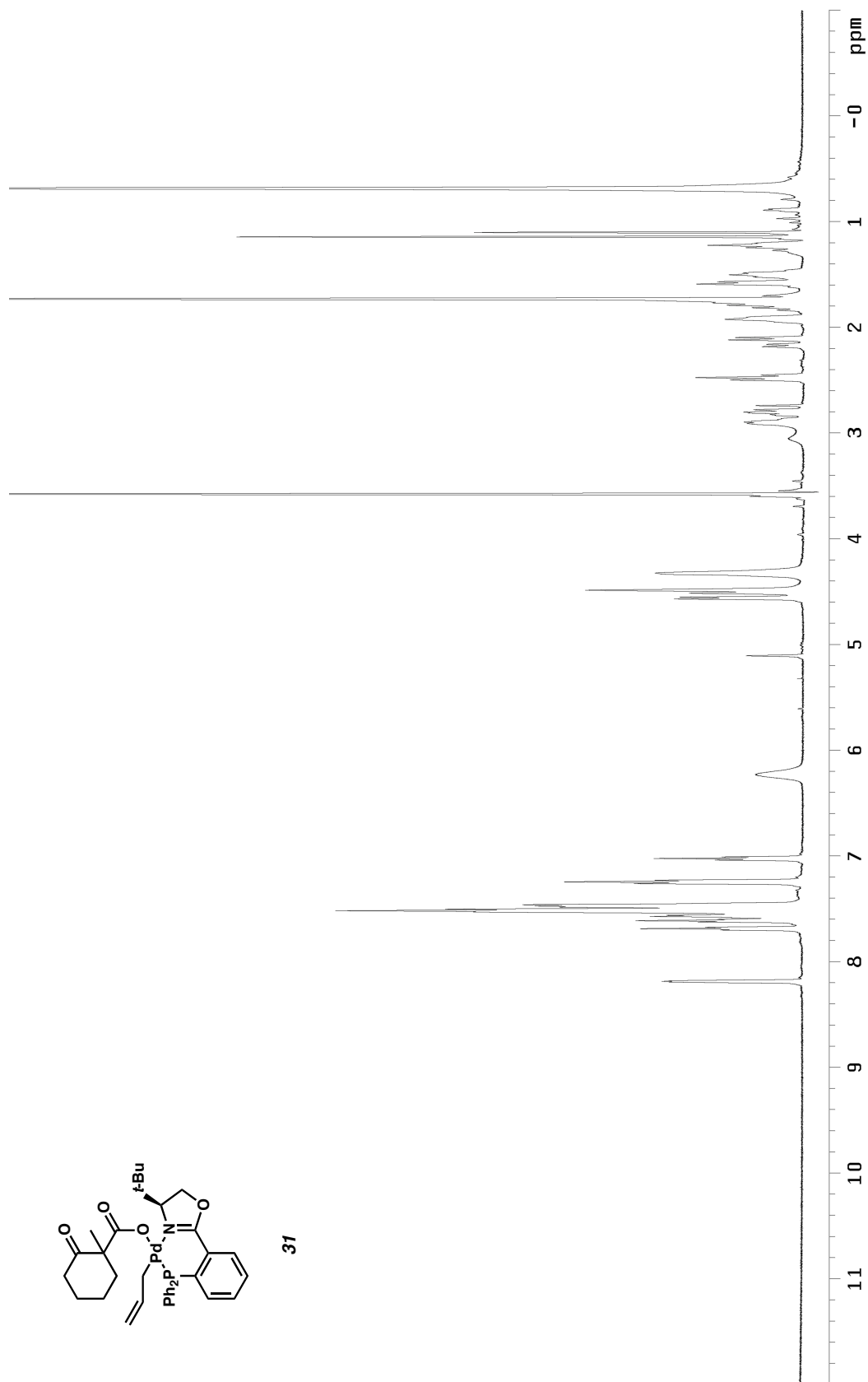


Figure A1.8. ^{13}C NMR spectrum of $[\text{Pd}_2(\text{mtdba})_3]$ (39) in CDCl_3

Figure A1.9. ^1H NMR spectrum of intermediate **31** in $\text{THF-}d_8$ at $-28\text{ }^\circ\text{C}$

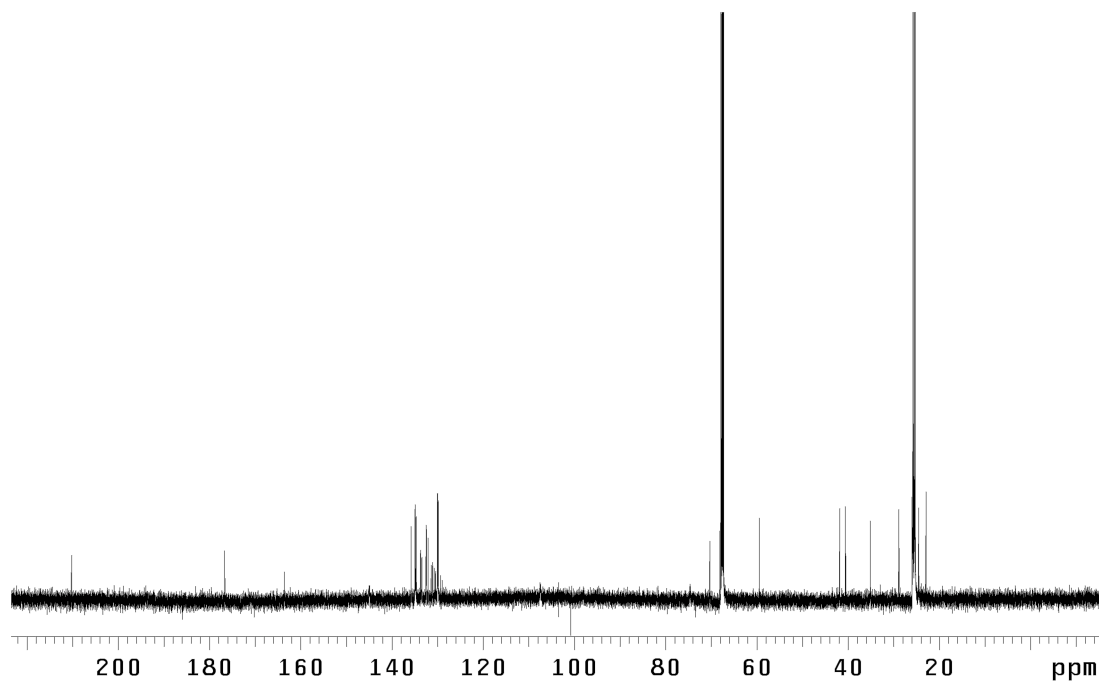


Figure A1.10. ^{13}C NMR spectrum of intermediate **31** in THF_{d-8} at $-28\text{ }^\circ\text{C}$

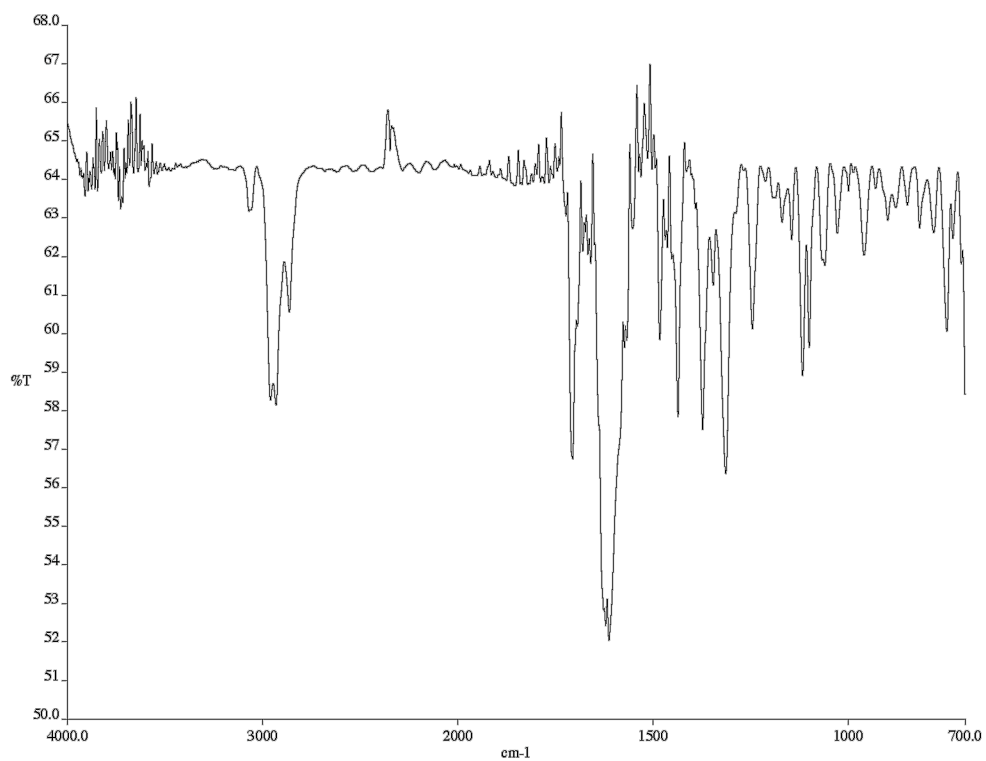
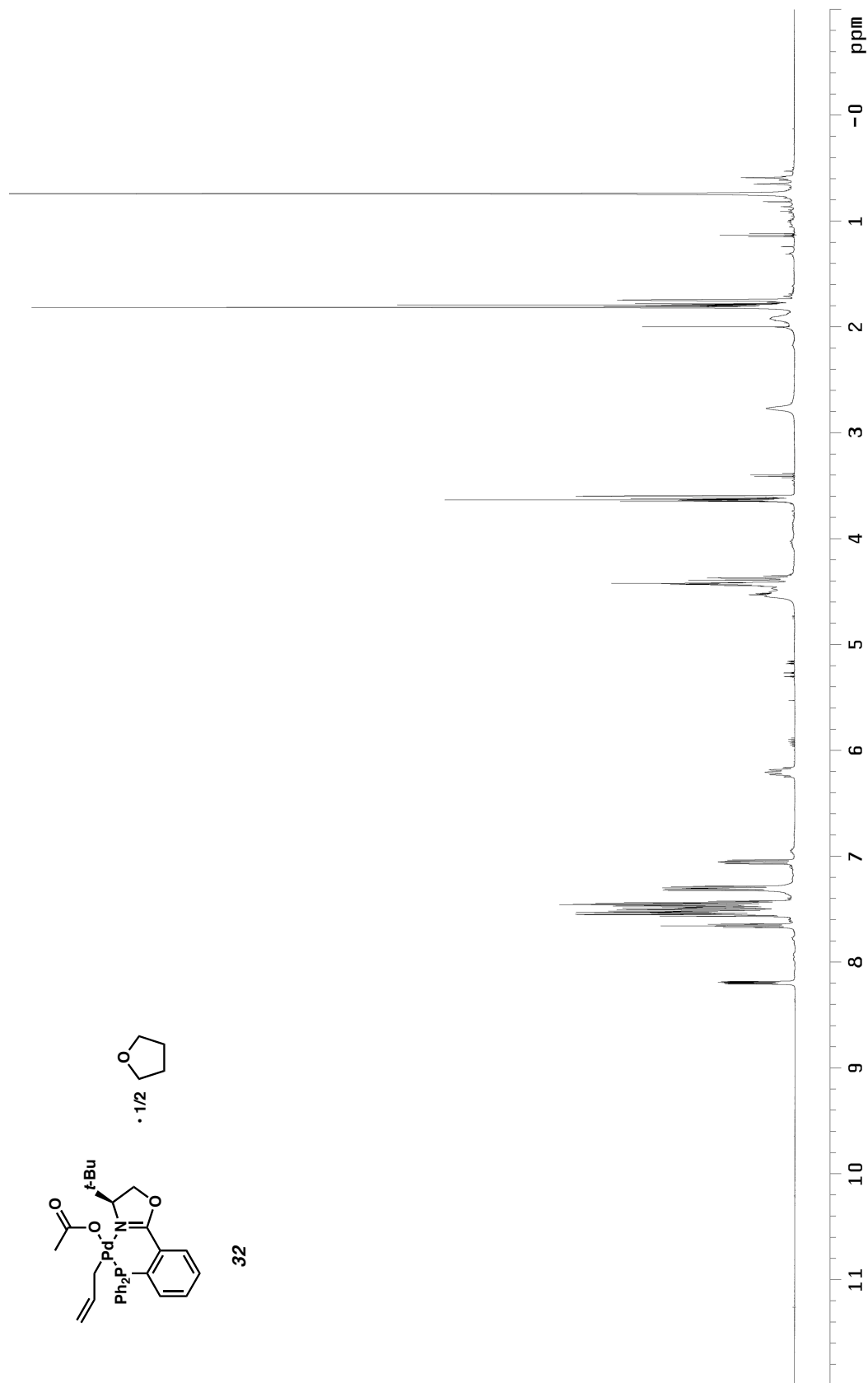


Figure A1.11. IR spectrum of intermediate **31**

Figure A1.12. ^1H NMR spectrum of [(S)-t-BuPHOX]Pd(allyl)(OAc)•1/2THF (**32**) in THF- d_8

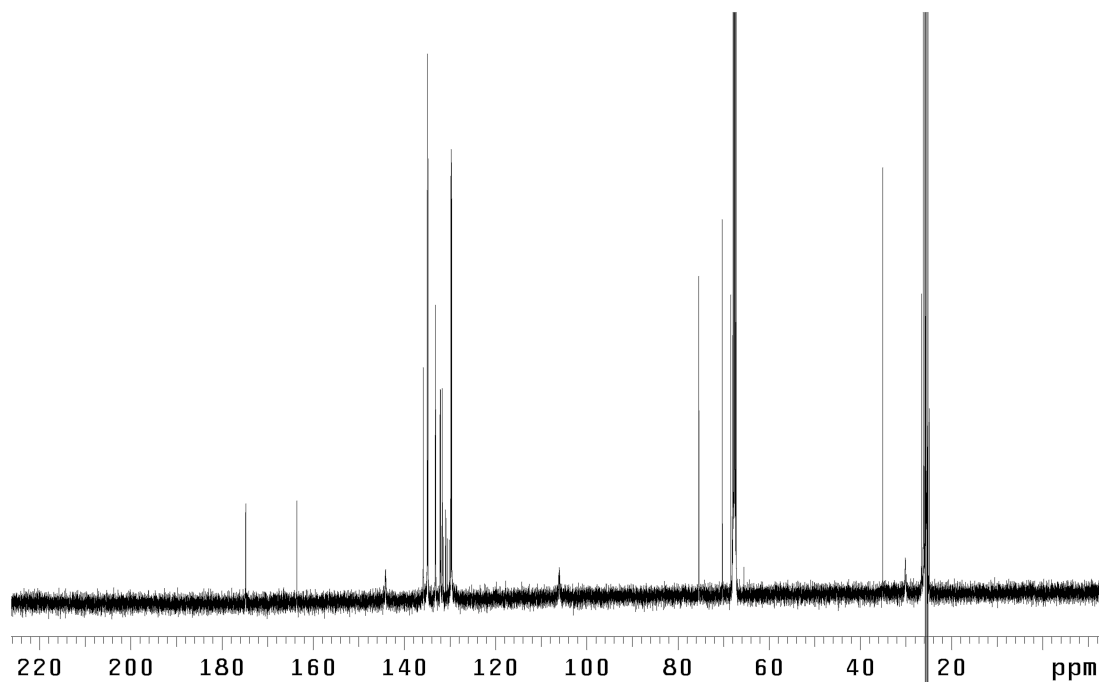


Figure A1.13. ^{13}C NMR spectrum of $[(\text{S})\text{-t-BuPHOX}]\text{Pd}(\text{allyl})(\text{OAc})\cdot 1/2\text{THF}$ (**32**) in THF_{d-8}

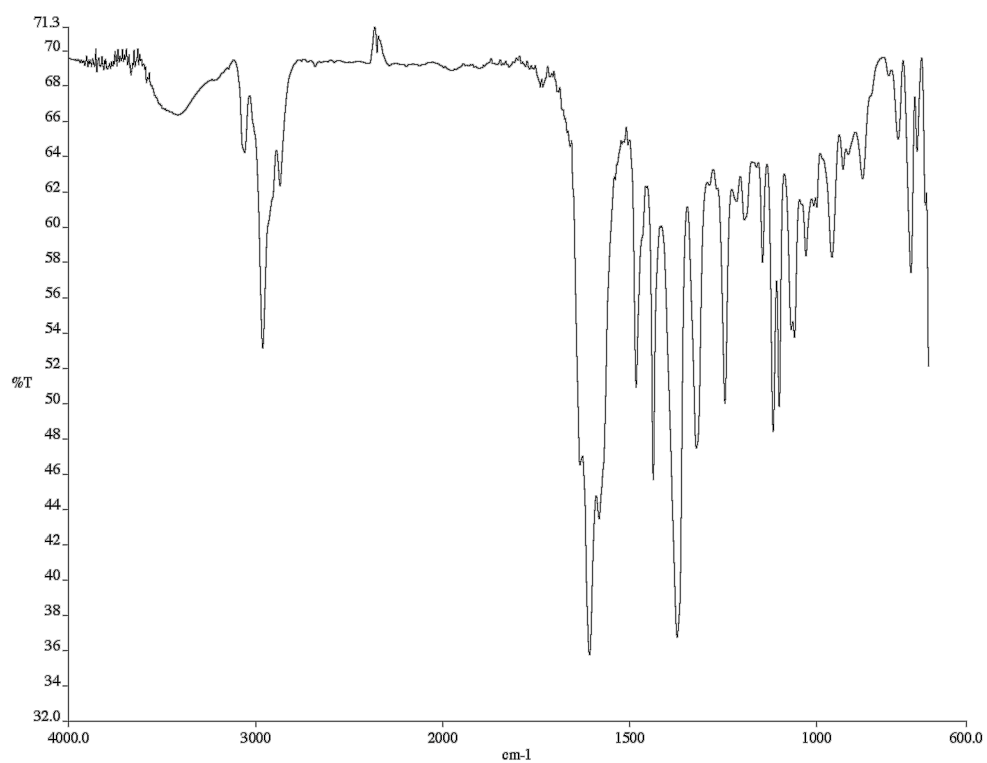
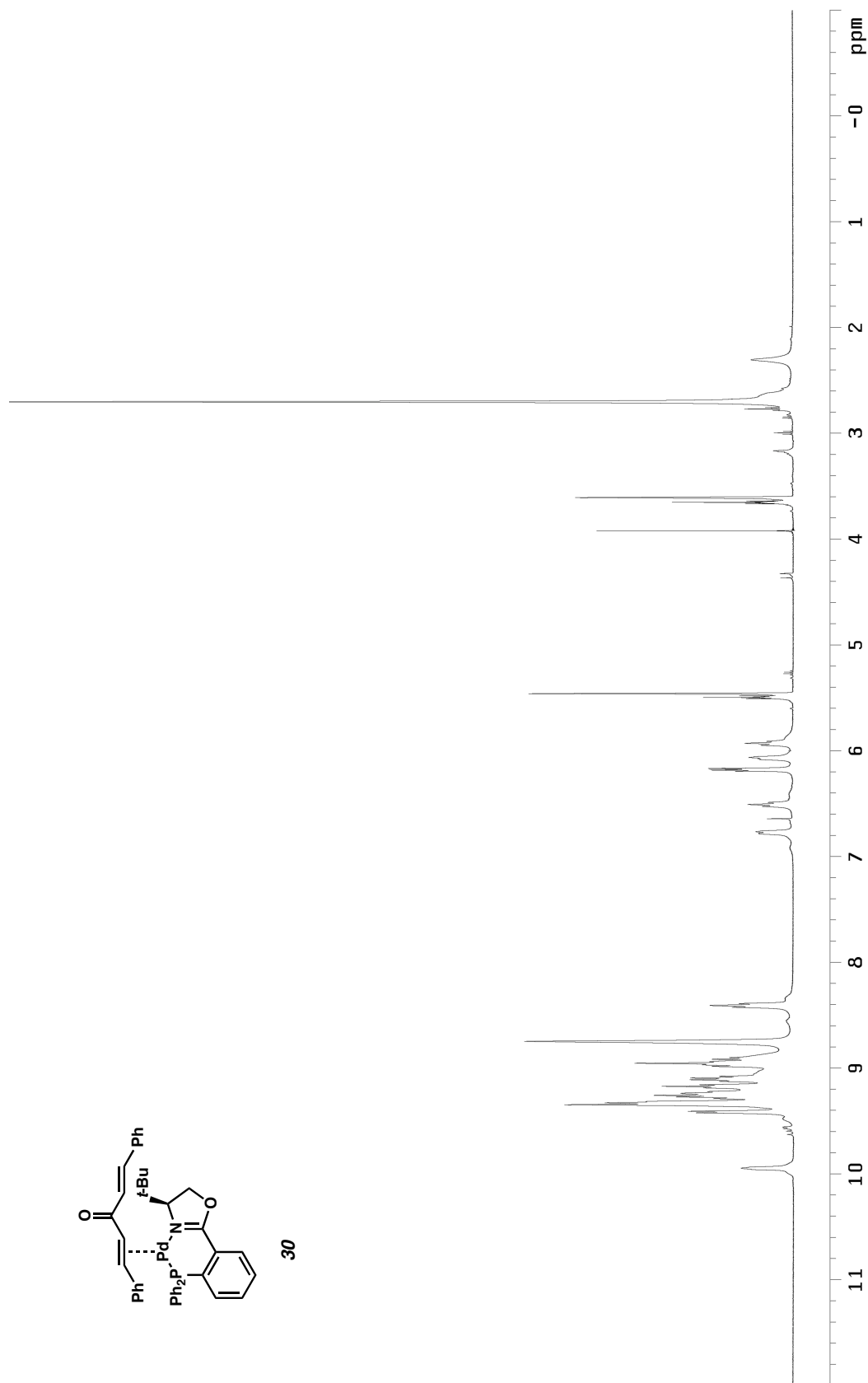


Figure A1.14. IR spectrum of $[(\text{S})\text{-t-BuPHOX}]\text{Pd}(\text{allyl})(\text{OAc})\cdot 1/2\text{THF}$ (**32**)

Figure A1.15. ^1H NMR spectrum of [(S)-*t*-BuPHOX]Pd(dba) (**30**) in THF-d_8

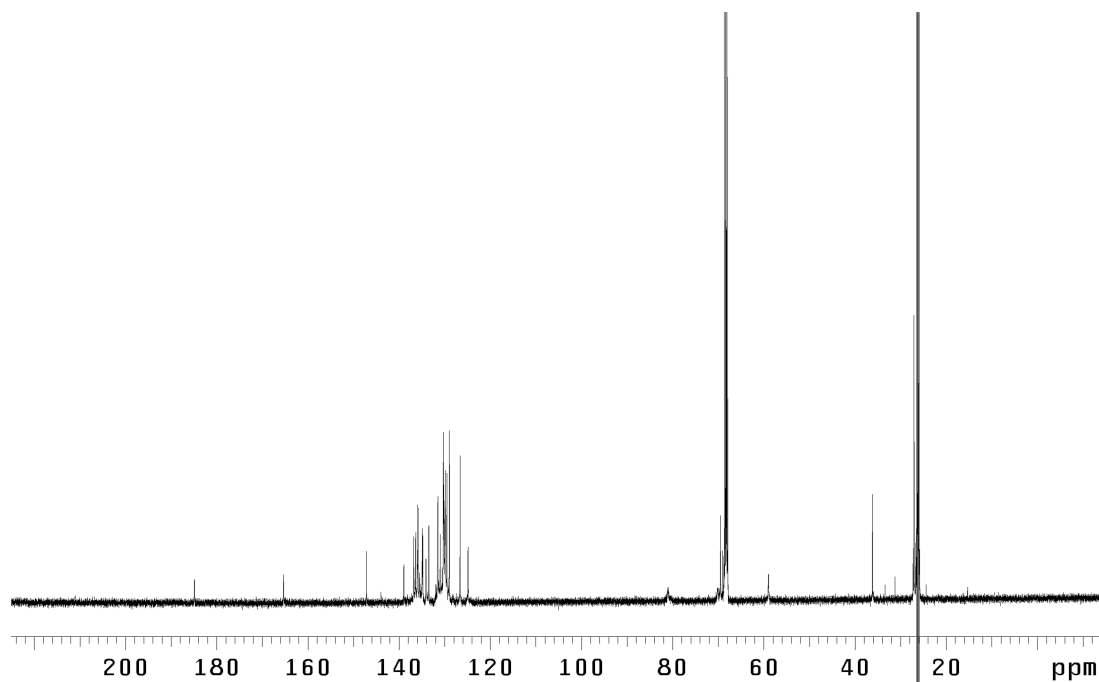


Figure A1.16. ^{13}C NMR spectrum of $[(S)\text{-t-BuPHOX}]\text{Pd}(\text{dba})$ (**30**) in THF_{d-8}

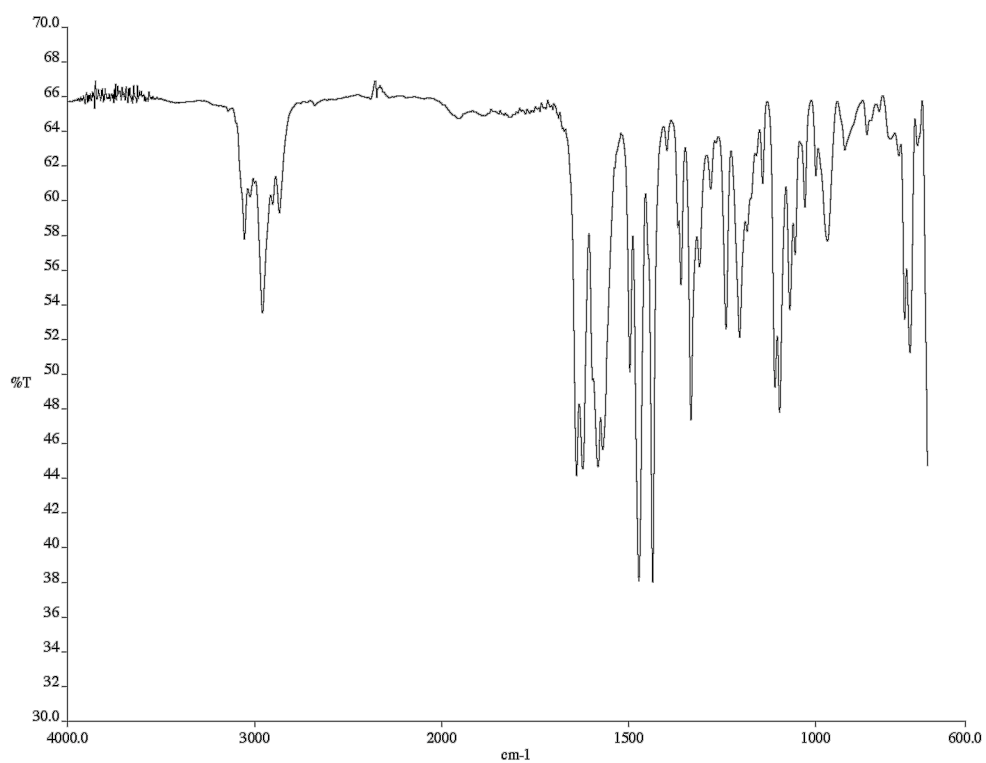
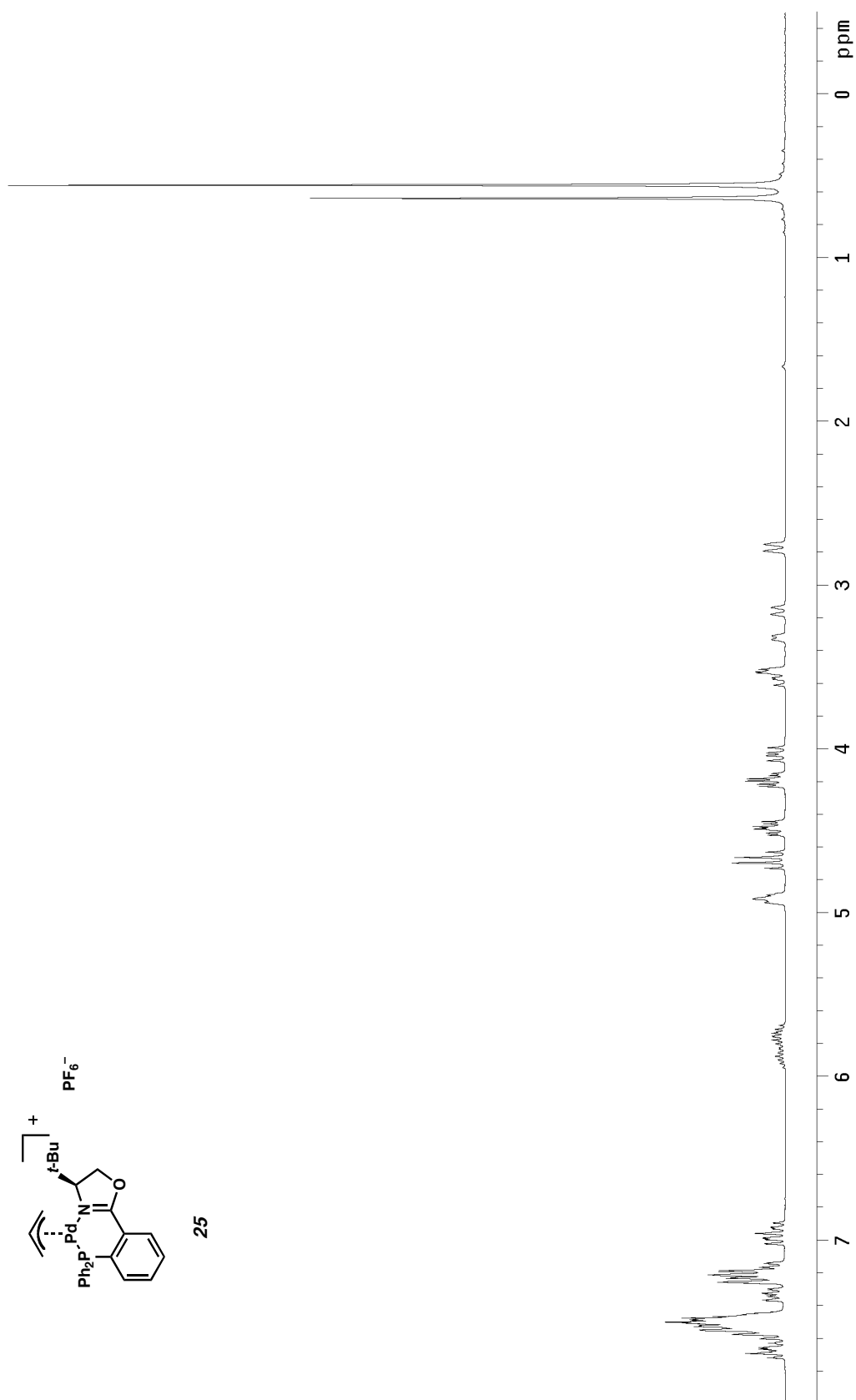


Figure A1.17. IR spectrum of $[(S)\text{-t-BuPHOX}]\text{Pd}(\text{dba})$ (**30**)

Figure A1.18. ^1H NMR spectrum of $[(S)\text{-}t\text{-BuPHOX}]\text{Pd}(\text{allyl})\text{PF}_6$ Salt (**25**) in CDCl_3

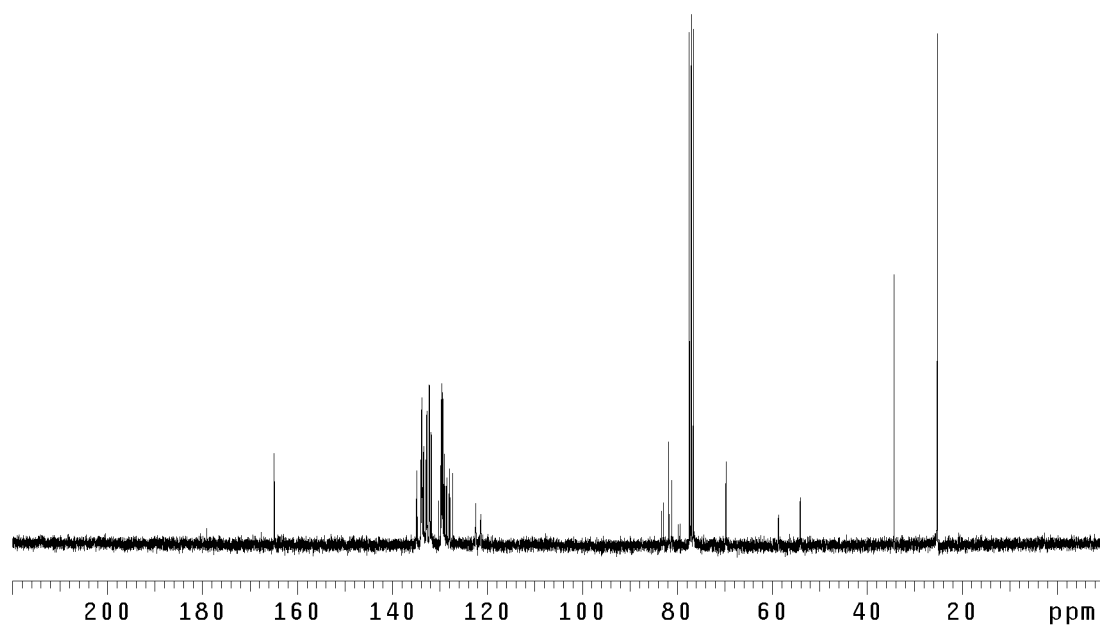


Figure A1.19. ^{13}C NMR of $[(\text{S})\text{-t-BuPHOX}]\text{Pd}(\text{allyl})\cdot\text{PF}_6$ Salt (**25**) in CDCl_3

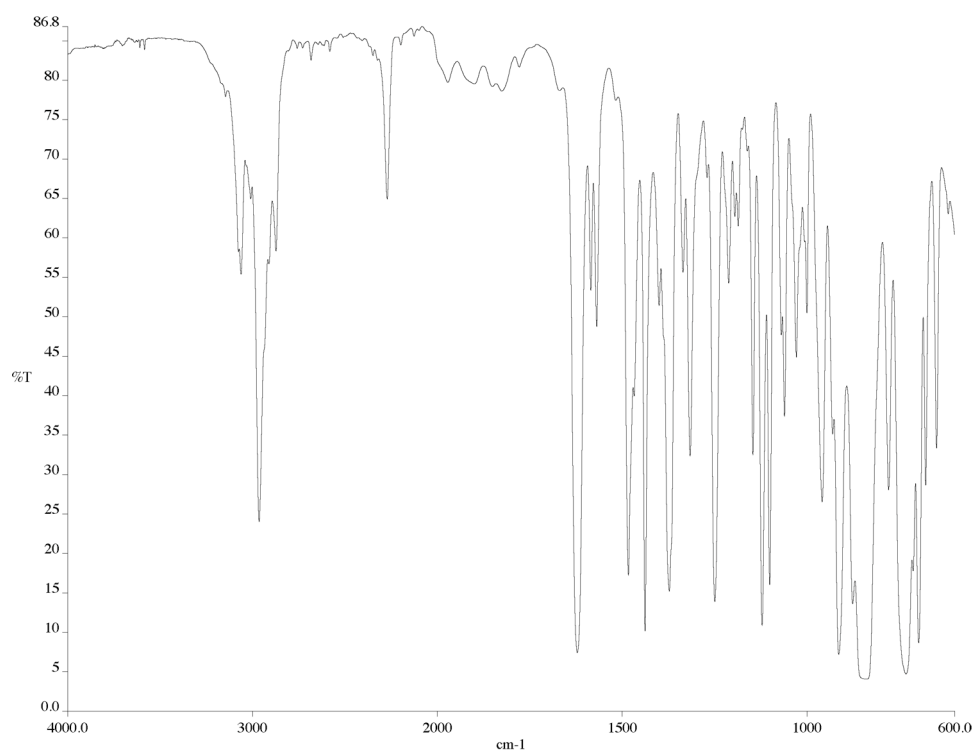
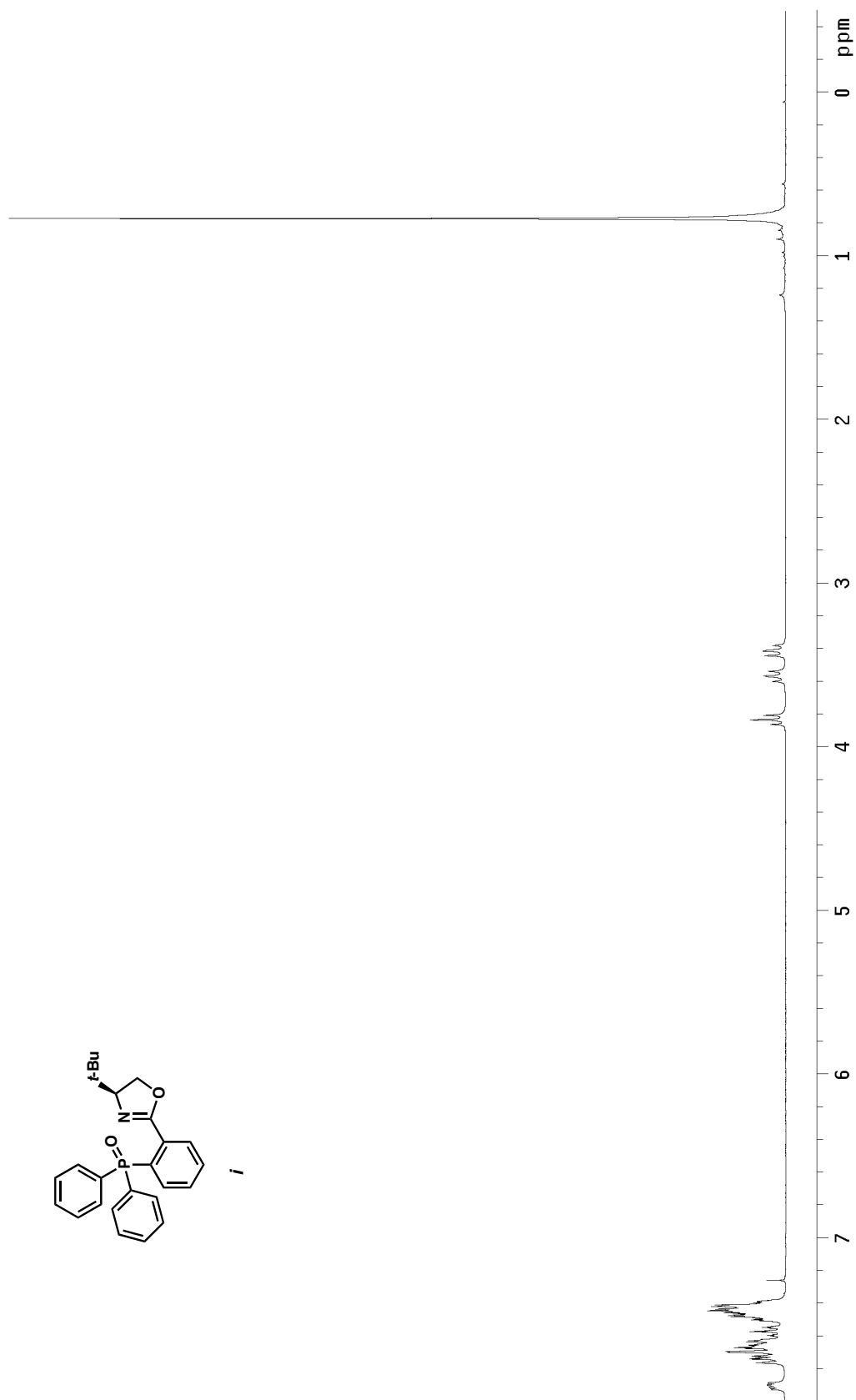


Figure A1.20. IR of $[(\text{S})\text{-t-BuPHOX}]\text{Pd}(\text{allyl})\cdot\text{PF}_6$ Salt (**25**)

Figure A1.21. ¹H NMR spectrum of (S)-t-BuPHOX oxide (I) in CDCl₃

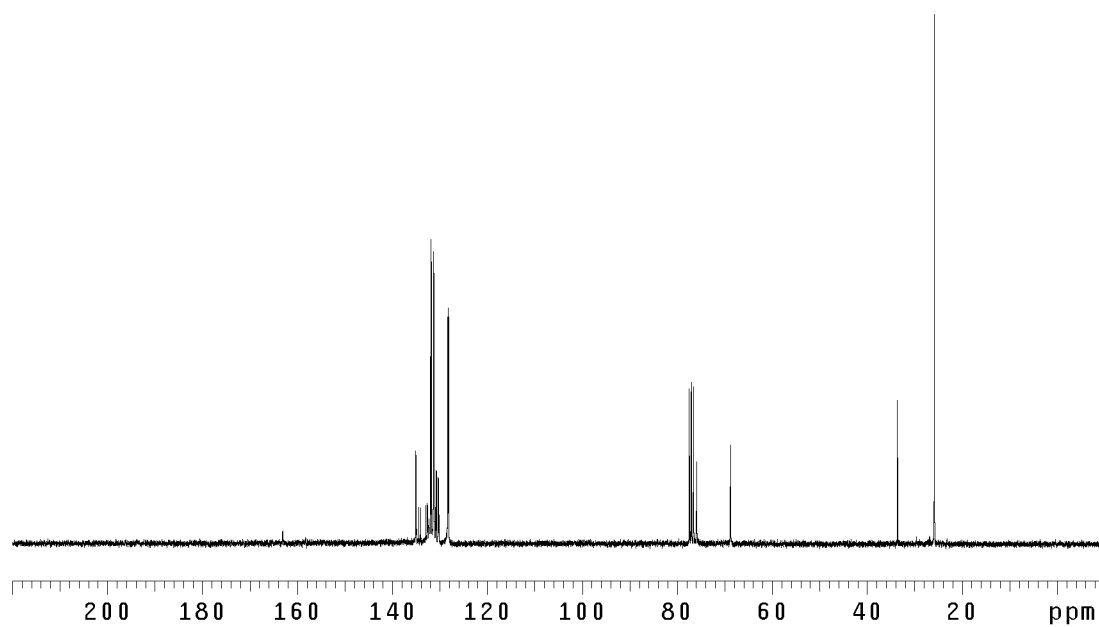


Figure A1.22. ^{13}C NMR spectrum of (S)-t-BuPHOX oxide (**i**) in CDCl_3

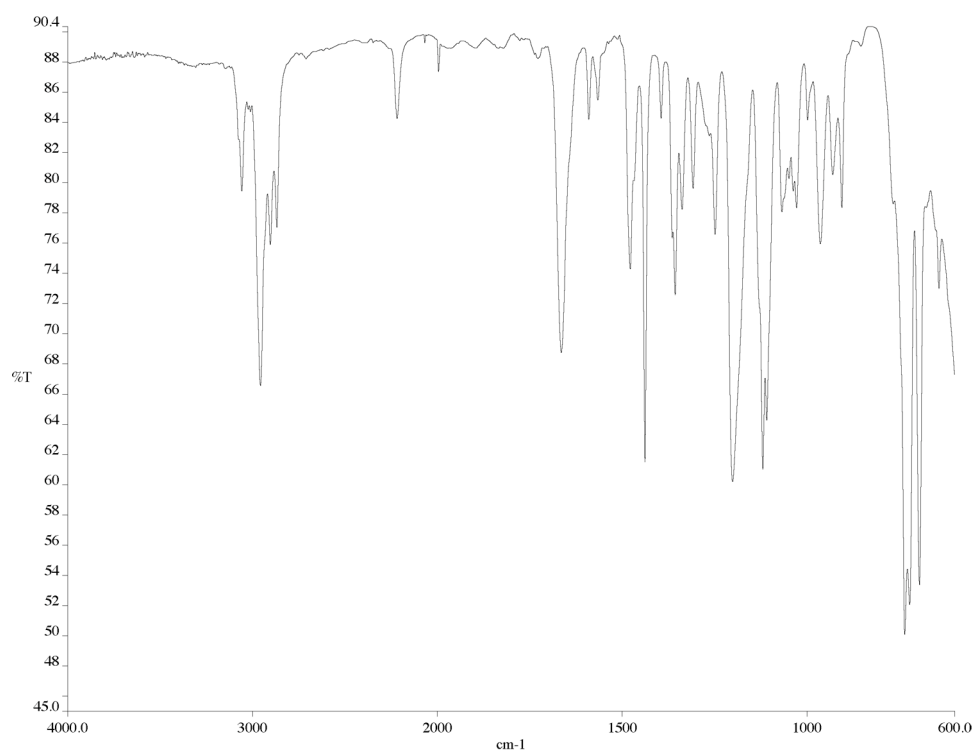


Figure A1.23. IR spectrum of (S)-t-BuPHOX oxide (**i**)